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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/713,192	11/17/2003	Won-Ho Lee	8733.971.00-US	9556

30827 7590 08/09/2005

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WASHINGTON, DC 20006

EXAMINER
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QI, ZHI QIANG

ART UNIT	PAPER NUMBER
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2871

DATE MAILED: 08/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b> 10/713,192	<b>Applicant(s)</b> LEE, WON-HO	
	<b>Examiner</b> Mike Qi	<b>Art Unit</b> 2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 20 June 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>11/17/03</u> . | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

The previous restriction is not proper and has been withdrawal. The rejection is presented.

#### ***Claim Objections***

1. Claim 5 is objected to because of the following informalities:

Regarding claim 5, recites “. . . the electric field distorting means is formed one of the first and second substrates.” Should be - - - . . . the electric field distorting means is formed on one of the first and second substrates. - - Appropriate correction is required.

#### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-2, 5-13 and 16-20 are rejected under 35 U.S.C. 102(b) as being anticipated by US 6,313,898 B1 (Numano et al).

Regarding claims 1–2 and 10-13, Numano discloses (col.16, line 3 – col.17, line 17; Figs. 21-23) that a multi-domain liquid crystal display comprising;

- first and second substrates (1 and 15);

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- gate and data lines (2 and 7) arranged to across with each other on the substrate (1) to define a pixel;
- pixel electrode (12) on the substrate (1);
- common electrode (18) the substrate (15);
- liquid crystal layer (14) between the first and second substrates (1 and 15);
- first and second alignment layers (13 and 19) on the first and second substrates (1 and 15) for causing liquid crystal molecules in the liquid crystal layer to form at least two domains having different liquid crystal alignment directions in the pixel;
- between the adjacent pixel electrode (12, 12a) having a slit that is an electric field distorting means on a boundary of the two domains; and the electric field distorting means parallel to the boundary between the two domains;
- the slit (electric field distorting means) is formed at the pixel electrode (12);
- the slit (electric field distorting means) is formed at the common electrode (18).

Regarding claims 5 and 16, Numano discloses (Fig.22) that between the adjacent pixel electrode (12, 12a) having a slit that is an electric field distorting means and is formed on a substrate (1).

Regarding claims 6 and 17, Numano discloses (col.16, line 3 – col.17, line 17; Figs. 21-23) that thin film transistor and pixel electrode (12) are formed on the substrate (1).

Regarding claims 7-9 and 18-20, (col.16, line 3 – col.17, line 17; Figs. 21-23) that

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the tin film transistor (TFT) having gate electrode, gate insulating layer (4) on gate electrode, semiconductor layer (5) on gate insulating layer (4), source/drain electrode (such as 8) on semiconductor layer (5); and color filter (17), black matrix (16), common electrode (18) are formed on substrate (15); and the black matrix (16) is formed on the boundary of the two domains.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 3-4 and 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Numano as applied to claims 1-2, 5-13 and 16-20 above, and further in view of US 6,710,837 B1 (Song et al).

Regarding claims 3-4 and 14-15, Numano discloses the invention set forth above. Numano lacks that the electric field distorting means comprising a protrusion.

Song discloses (col.5, lines 29-62;Fig.3B) that a linear protrusion (5) is formed on the substrate (1), such that the liquid crystal molecules (3) having two domains, and that compensate the viewing angle.

Therefore, it would have been obvious to those skilled in the art at the time the invention was made to modify the liquid crystal display of Numano with forming protrusion as taught by Song, and being motivated for improving the display angle, sing

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forming protrusion would compensate the viewing angle by the two domains of the liquid crystal molecules.

***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.


7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mike Qi whose telephone number is (571) 272-2299.

The examiner can normally be reached on M-T 8:00 am-5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on (571) 272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mike Qi  
Patent Examiner

  
DUNG T. NGUYEN  
PRIMARY EXAMINER